MEDICAL RESEARCH COUNCIL OF CANADA

Report of the President

1997-1998

Medical Research Council of Canada
Conseil de recherches médicales du Canada

Canada

105-00804/

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© Public Works and Government Services Canada, 1998
Cat. No. MR1-1998
ISBN 0-662-63724-0

Medical Research Council of Canada
Conseil de recherches médicales du Canada

October 15, 1998

The Honourable Allan Rock, P.C., M.P.
Minister
Health Canada
Ottawa, Ontario
K1A 0K9

Dear Sir:

In accordance with the requirements of the *Medical Research Council Act*, I have the honour to present to you herewith the Report of the President of the Medical Research Council for the fiscal year 1997-98.

Yours sincerely,

Henry Friesen

Henry Friesen, M.D.
President

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President's Message

To promote, assist, undertake, advise: serving the health of Canadians

In a laboratory filled with sophisticated equipment, white-coated scientists bend over their electronic microscopes, enter their observations on computer keyboards or scribble obscure symbols in notebooks. For many people, this image has more to do with science fiction than with their everyday health, and yet the links between the activities of Canadian researchers and the health of Canadians are multiple and ever-present. Every day, because of research, thousands of Canadians enjoy a better quality of life, through individual and collective applications of the results of work performed in the field of health. The links between health research and the welfare of individuals are complex, but the names they go by are very simple: sound child development, healthy aging, proper nutrition, fertility, health care or disease prevention.

As President of the Medical Research Council of Canada (MRC), I know that the work of the organization I head establishes links between the work of Canadian researchers and the health of Canadians. As a granting agency, MRC is in touch with the many areas of leading-edge research being performed in this country and, is particularly aware of the immediate and long-term benefits such research offers the population. What may seem like science fiction to some is already the present for us. MRC's mandate is directed towards the quality of life of Canadians and their capacity to live well, through the application of research, here, now and over the next millennium.

In these lands...

Some say that living well is an art, but the scientific approach recognizes as well the delicate balance between knowledge, an understanding of life and technical expertise. History teaches us that the art of living well has changed considerably over the centuries. In 1664, the interpreter, soldier and *seigneur* Pierre Boucher praised the Canadian climate and its beneficial influence on health: "The air here is extremely wholesome at all times: but particularly in Winter, disease is rarely seen in these lands." Yet, in those long-ago days, one child in five died in the first year of life, and many more were lost to typhus or smallpox. While these sad statistics still hold true in some countries of the world today, in Canada, the passage of time has brought a definite improvement in the definition of living well (in 1993, 6 deaths per 1000 children below the age of one). Our infant mortality rate is now among the lowest in the world and our life expectancy among the highest. We have only to look back a few decades to see the immense progress that has been achieved.

In 1931, a boy could expect to live an average of 56.2 years and a girl 57.8 years, while today the life expectancy is 75 years for men and 81 years for women.

Behind this evolution in the very definition of what living well means for Canadians individually and collectively, lies progress in scientific knowledge and efforts by public authorities to protect and improve health standards in this country. Because of its role, MRC is particularly sensitive to the need for such efforts. It has been entrusted by Canadian law with a mandate to "promote, assist and undertake basic, applied and clinical research in Canada in the health sciences; and advise the minister with respect to such matters relating to such research [...]" *Promote, assist, undertake, advise*: these are our key words in terms of advancing scientific knowledge and thus helping the Canadian population to live well.

Scientific knowledge clearly has a definite impact on the well-being of Canadians. When you think about it, every one of us knows people who are alive and well thanks to advances of scientific knowledge. MRC supports projects designed to identify and prevent health problems in the broad sense of the term in order to improve the welfare of

The Council finances the health research activities of nearly 10,000 scientists, technicians and research support workers in more than two dozen universities and 100 research institutes and teaching hospitals in Canada.

individuals. This requires extensive effort: laboratory research, of course, but clinical research as well, research into health service delivery and studies of the determinants of health and aging, among many other approaches.

With the growing complexity of the modern world, ensuring the well-being of the population demands close coordination of individual and collective efforts. While individual Canadians can adopt healthy lifestyles, the well-being of the population as a whole depends on sound public health policies based on adequate funding for research. This is where government has a role to play. While decisions on research funding may seem abstract in nature, and research itself seems abstract as well, far removed from the health concerns of individuals, they both impact on the capacity of individuals to live well in their daily lives.

MRC is the leading federal granting agency in this field. After decades of achievements and the development of an international reputation, Canadian health science research has seen its funding shrink dramatically. The most recent federal budget has reversed the situation, a fact for which we can only be grateful. We cannot be complacent; we must meet the challenges of the modern world in a way that will enhance the well-being of the communities and individuals that make up our country.

A question of ethics

One of these challenges is the need for constant awareness on issues of ethics in research. A Working Group established by the MRC and the other two research funding Councils, the Natural Sciences and Engineering Research Council and the Social Sciences and Humanities Research Council has been working intensively since 1994 to develop a joint policy for research involving humans. This new joint policy will replace those that the Councils have had in place separately since the mid 1970s. The Councils published the final report of the Tri-Council Working Group in 1997. Further consultations on this draft have led to some revisions; the Tri-Council Policy Statement will be published in 1998.

As the first country in the world to formulate a multidisciplinary policy in this area, Canada can be proud of this statement of the complex ethical principles that surround the duties, rights and standards governing researchers in this country. The new policy underlines the need to respect the physical, psychological and cultural integrity of individuals. Such elements as consent, vulnerability, respect for privacy, equality and balanced relationships, together with efforts to minimize the harmful effects and maximize the advantages of the study, must be an integral part of any ethically acceptable research project funded by the three Councils.

As the popular bumper sticker says: "If you don't like research, try a disease". The Medical Research Council of Canada is concerned with the well-being of Canadians today and tomorrow, and seeks to ensure that research is directed along a path which will be beneficial to all. The publication of a common policy on ethics for Canadian research councils will establish guideposts for this path.

An effective research framework

Canada's health research infrastructure has unique strengths. MRC funds research in universities, hospitals, community health institutions and agencies, and research institutes. Many Canadian centres perform world-class research, particularly in such areas as the neurosciences, the cardiovascular system,

genetics and imaging and, increasingly, in health services and population health.

When Sir Frederick Banting and his colleagues discovered insulin, for example, some 70 years ago, they made it possible to transform millions of lives forever. When Wilder Penfield developed a brain mapping technique in the 1940s, he laid the groundwork for modern neurology and the treatment of diseases of the nervous system. When, more recently, the University of Alberta's Dr. Arthur Prochazka designed a bionic glove, he significantly improved the quality of life for quadriplegics. When Dr. Peter St. George-Hyslop and his colleagues in Toronto isolated the genes associated with two forms of Alzheimer's disease, which affects more than 300,000 Canadians, he raised many hopes. Judes Poirier, of the Douglas Hospital, defined the links between one form of circulatory protein and Alzheimer's disease and confirmed the accuracy of diagnosing the disease.

At McGill University, the work of Dr. Philippe Gros has permitted advances in the fight against resistance to multiple medications for cancer and in the control of natural resistance to the infections that cause such diseases as tuberculosis, Salmonella food poisoning and leprosy. A few years ago in Montreal, Professor Bernard Belleau identified a molecule with antiviral properties. His research led to the discovery of the molecule known as 3TC which is now used in the treatment of HIV infection. The work of Dr. Lorne Tyrrell, of the University of Alberta, on the same molecule has led to the development of a very promising treatment for hepatitis B, which has the potential to help 20,000 to 40,000 Canadians and 20 to 50 million people worldwide, and generate more than a billion dollars in annual revenue worldwide.

In 1993, Dr. Michael Smith of the University of British Columbia won a Nobel Prize in chemistry for his work that allowed specific gene structures to be altered, thereby offering a better understanding of the genes involved in cancer and bacterial and viral infections. His work provided an essential tool for the biotechnology industry.

These examples offer no more than a glimpse at the impact of health research. Other Canadian scientists are leading the way in the discovery of the defective genes responsible for such diseases as cystic fibrosis, muscular dystrophy, Huntington's disease, heart disease, cardiovascular disease, diabetes and cancer, including breast cancer. Let me give one final example, which demonstrates very clearly how the funds invested in research in Canada contribute to the welfare of individuals.

Dr. Brenda Gallie, at the Hospital for Sick Children, is an internationally recognized authority on the development of cancer. Her work has focused primarily on retinoblastoma, a form of eye cancer in children, but her discoveries have contributed to a better understanding of cancer in general. For one Canadian family, Dr. Gallie's research is anything but abstract, for it has allowed a son to see the world - with both eyes. In 1970, at one year of age, the father, Terry, had to undergo surgical removal of both eyes. The diagnosis: retinoblastoma. In 1996, Dr. Gallie's research isolated the genetic mutation which causes the disease. When Terry's son Riley was born, he was found to have inherited the dysfunctional gene from his father and had 13 tumours on his two eyes. As a result of Dr. Gallie's work, Riley underwent chemotherapy and laser therapy. The result: both his eyes were saved, and he enjoys good vision! The money invested to support Dr. Gallie's research has had a positive impact not only on young Riley's life and that of his family, but on industry as well, since a new company has been established to market this form of molecular diagnosis in Canada and abroad. Moreover, the cost of this form of disease management is 30 times less than the only treatment available when Riley's father lost his sight. This example clearly shows the tangible value of fundamental research in Canada and how the money invested in such research benefits the well-being of individual Canadians. Research in this case is demonstrably a matter of vision.

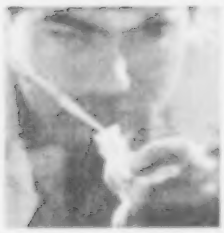
Millions of Canadians understand this and express their belief through their generosity to health charities. I believe they understand the importance of research better than some who write about health policy. When it comes to commitment to research, Canada would do well to "trust the people".

The 1998 federal budget allowed the MRC to fund, from the September 1997 competition, an additional 140 operating grants, 10 additional Scientists Awards, a "Challenge" partnership

program, restore clinical trials and enhance the Regional Partnerships Program.

1998: a turning point

Through its granting agencies, the Canadian government helps people to live well by financing health research and its applications. In its efforts to fight the deficit, the federal government has made painful cuts, for several years, in its research budgets. The year 1998 will mark a turning point, since the government has reestablished funding of the major granting agencies at the 1994-1995 level.



The *Science and Technology Action Plan for the Federal Health Portfolio* notes that the health research sector employs 7500 researchers, 11,000 graduate students and postdoctoral fellows, and 29,500 research assistants and technicians.

Today, the great explorers no longer seek new lands, but new ways to see the world around us. This is a fundamental element of the process of scientific discovery. MRC, through its grant programs, its rigorous peer review process and its role of providing fundamental support for the advancement of Canadian research, is hoisting sail for some of the greatest expeditions of scientific discovery in the world. "To live, we must seek", wrote poet-songwriter Félix Leclerc. To seek, we must have the means. Now that the government has begun to restore research funding in Canada, it must pursue its efforts in this direction and start today to ensure the well-being of Canadians tomorrow. We have shut the door on the hard years of cutbacks, but we cannot stop on the threshold. As Health Minister Allan Rock said in a message to the research community: "We have reversed the trend, and that is good news. There still remains, however, a very stark contrast between the per capita allocation to health research in Canada and that in the United States. We have a long way to go before we achieve the kind of investment in this research that we should have as a nation."

While it is clear that Canada offers enormous possibilities for research, it is by no means clear that the country invests enough to take full advantage of these possibilities. Any renewal of the Canadian health system must necessarily be based on research. Is it not research that enables us to determine the elements that contribute most to the health of Canadians? Is it not research that provides the best basis for public health policies, and for the funding and management of health services? Is it not research that, in the end, stimulates innovation, that powerful engine of economic growth? Is it not research that provides a succession of top-flight scientists to take up the torch of research and carry it forward into the new millennium?

MRC believes that Canada's capacity for innovation is largely dependent on a much higher level of funding for health research. In addition to permitting the training of new researchers, funded research promotes innovation in the delivery of health services and in the development of drugs and technological or other health care-related products. As noted in the *Senate Report on Post-Secondary Education in Canada* (1997), "Canada cannot afford to lag behind the R and D efforts of its major trading partners." Only the federal government can undertake long-term commitments to support serious research initiatives and thus slow the brain drain to countries which do provide researchers with the facilities required to do their best work. Canada must assume its rightful position in health science research on the world stage. To do otherwise would mean wasting Canadian expertise, allowing other countries to benefit from it instead.

Canada can only take its place among the scientific powers of the world if it has the means to do so. By funding basic or applied research, we work directly on improving the lives of individuals. Governments realize that the prosperity and well-being of the population will depend increasingly on scientific research and on the innovations it generates. The House of Commons Standing Committee on Finance maintains, moreover, that the federal granting councils are the key to Canadian leadership in the modern knowledge-based economy of the 21st century.

The Canadian health system, renowned throughout the world for its quality, needs cutting-edge research or it will find itself, sooner or later, condemned to pay the high cost of obsolescence and inefficiency. The Canadian public and health research community have repeatedly urged the government to take the steps required to provide adequate support for both basic and applied research. At a time when the other G-7 countries are

renewing their health research efforts on the world stage and making it a national priority, Canada can no longer afford to keep its strongest assets in reserve at the risk of losing them forever.

A systemic approach

We must recognize the systemic nature of research investment. As our *Report on Plans and Priorities* notes, MRC's vision is of a Canadian health sciences research community which is both internationally competitive and capable of producing new knowledge. The results of this research help to maintain and improve the health of Canadians and ensure economic growth and the development of the health sciences sector. How could I think otherwise, after seeing my discovery of human prolactin applied rapidly, both here in Canada and around the world, by international companies which used its diagnostic and therapeutic potential to develop an effective drug for the treatment of infertility? I am convinced that basic research is at the heart of all great scientific and technical innovations. We cannot, however, expect commercial firms, which must answer to their shareholders, to make the long-term investments that basic research requires. This is where government comes in.

Canada has all the basic elements for an excellent health research system. We have an established infrastructure, high quality post-secondary education, experienced researchers and promising newcomers. But we need to invest more in basic research substantially more now and in the long term. We need to invest more along the continuum from basic to population health research, from molecule to main street. In this way, we will reinforce both the existing health system and the intellectual capital which will ensure our long-term prosperity. This is the new perspective on the role of health research in the modern world that governments would do well to embrace.

Canadian Institutes of Health Research - A 21st century health research innovation concept

If this new perspective is to be translated into action, it will require more than simply injecting new money. We must maximize existing resources and promote the establishment of extensive research networks. A proposal to create Canadian Institutes of Health Research which will group research strengths in centres of knowledge is an integral part of this approach. An effective response by Canada to the challenges posed by the complexity of the modern world, the Institutes project offers the best means of improving the research framework and reinforcing the innovation process within a Canadian knowledge-based economy. The modern context demands a major effort to ensure cohesion, if we are to derive maximum benefit from the use of our instruments and from the theoretical and technical expertise of our researchers and to share today's options with future Canadians – what we now call sustainability. The formation of research alliances or networks is an important element in the answer to the growing need for specialized knowledge to meet the complex challenges of scientific research today. By promoting the expansion of knowledge and the multiplication of scientific research production sites, combined with maximum interconnection of knowledge, these Institutes would make it possible to stimulate networks of innovators, reinforce the scientific bases of Canada's expanding health industry and ensure maximum spin-off benefits for the Canadian population.

By proposing to bring together the dynamic forces within the country in the area of health research, the Institutes project reflects the spirit of partnership, a formula which has proven successful in many other fields. The Canadian research community is a virtual network of partners. While many Canadian researchers have already adopted a culture based on close collaboration, it is an extraordinary opportunity for the Canadian government to extend this culture now to the actual structure of the health research system. By capturing the full spectrum of health research into a virtual consortium, the

A study of funding by the National Institutes of Health in New York universities found that every $100,000 invested in research generates between 2.75 and 2.93 jobs.

Top 10 investors in Life Sciences in Canada for 1997

1. CMDF 2. Working Ventures Canadian Fund 3. MDS Health Ventures Inc. 4. Sofinov 5. BioCapital 6. TD Capital 7. Oxbow Equities Corp. 8. RBCC 9. Triax Growth Fund 10. VenGrowth Investment Fund

Canadian Institutes of Health Research could establish a new framework for interdisciplinary research which will permit sharing on a national scale of skills, knowledge and expertise in fields with pressing public health needs: child health, virology, infectious diseases, cancer, aging, cardiovascular disease, diabetes and health services research, public health, nursing, etc.

Canada already offers numerous examples of successful networks created to reinforce research capacity. Among the Networks of Centres of Excellence (NCE) funded by MRC is the Health Evidence Application and Linkage Network of HEALNet which does interdisciplinary research into health care. Another is the sociobehavioural research network on cancer established in 1994 by the Canadian Cancer Society and the National Cancer Institute of Canada. These networks are already providing evidence of the advantages associated with partnership: more rapid completion of studies, improved ability to generate and perform research projects, easier application of research results.

In a country as vast as our own, Institutes would have the potential to reduce fragmentation and duplication of efforts and promote cooperation and coordination, thus permitting Canada to improve its scientific research capacity and to assume its rightful position in the world. The Institutes approach has proven successful, moreover, in a number of other countries, including the United States, France and Britain.

Partnerships: building the networks

Most Canadians understand that the future is not just a promise of vague hopes, but is created now. Our country can take pride in the international partnership initiatives which contribute to its health research influence, to Canadian economic growth and consequent job creation.

At MRC, we have emphasized two major types of partnership activity: co-funding and strategic alliances with the volunteer sector, industry, government and various organizations who share an interest in promoting health research. Our co-funding partners share our desire to invest in research and training projects which add value to health research in Canada. A number of partnerships have already been established such as the Canadian Breast Cancer Research Initiative, the HIV/AIDS Strategy, the NCE Program and the MRC/PMAC (Pharmaceutical Manufacturers Association of Canada) Health Program. In the volunteer sector, the K.M. Hunter Charitable Foundation has joined forces with MRC to offer up to 24 new doctoral research awards over a period of three years to students conducting research into Alzheimer's disease, arthritis, cancer, glaucoma, heart disease, stroke, multiple sclerosis and schizophrenia. We have also just entered into a second phase of partnership with the Juvenile Diabetes Foundation of Canada to invest in research networks focussed on a cure for diabetes. We are joining with the National Health Research and Development Program of Health Canada in large-scale initiative on research into HIV/AIDS.

The Life Science Research Investment Initiative, a strategic alliance between MRC and Investment Partnerships Canada, seeks to attract foreign investment into Canada by establishing links between major pharmaceutical companies and Canadian expertise. A number of projects with Astra, Pharmacia-Upjohn and Chugai Pharmaceuticals is already in progress, and a number of opportunities is being explored with several European and American firms.

A few years ago, MRC inspired the creation of the Canadian Medical Discoveries Fund (CMDF) to ensure that discoveries made in Canada are developed and exploited here. Today, CMDF is the largest investor in the Canadian life sciences sector.

Our efforts to promote partnerships do not stop there. Two task forces (Genome Research and the MRC/PMAC Health Program) are exploring new ways to strengthen these two key areas of research and MRC has already kick-started genome research into a five-million-dollar-a-year commitment.

The decision to work towards the creation of the Canada-Israel Health Research Foundation and the Canadian-Palestinian

Health Research Foundation is a good example of the efforts being made to develop partnerships with other countries. Providing advice and expertise, MRC is proud to participate in the development of these organizations, which will be funded by philanthropic donations and will seek to promote the collaboration between health researchers in the two countries. Through MRC, and now also the National Research Council, Canada is an active participant with the other G-7 countries, the European Union and Switzerland, in the Human Frontier Science Program.

In the past year, a partnership has been developed in the neurosciences between Canada and Japan. Phase one of the project included a neuroscience mission to Japan in March 1997 and a workshop in Montreal in August of the same year to define areas of future collaboration. Three more workshops were held later around the country, in London, Calgary and Vancouver, on such subjects as cognition, imaging, neurodevelopment and neurogenetics. Phase two of the project will involve collaborative research studies and a postdoctoral research program. Activities like these allow Canada to assume its rightful position in projects which, like the Japanese work on the science of the brain, have attracted attention in many countries, including the United States, France, the Netherlands and Germany. These are all examples of what Canada can accomplish when it has the means to match its aspirations.

MRC is resolved to maximize health research opportunities in Canada, and will continue to seek out new partnerships with agencies and companies in order to promote the growth of this sector.

A question of well-being and of the future

I can imagine how a Canadian health research network, once created, would radiate outward like the sun, basic and integral to the health of Canadians and extending its beneficial effects first to individual Canadians, communities, regions and provinces, and then to the health care system as a whole, economic development and Canada's place in the international community.

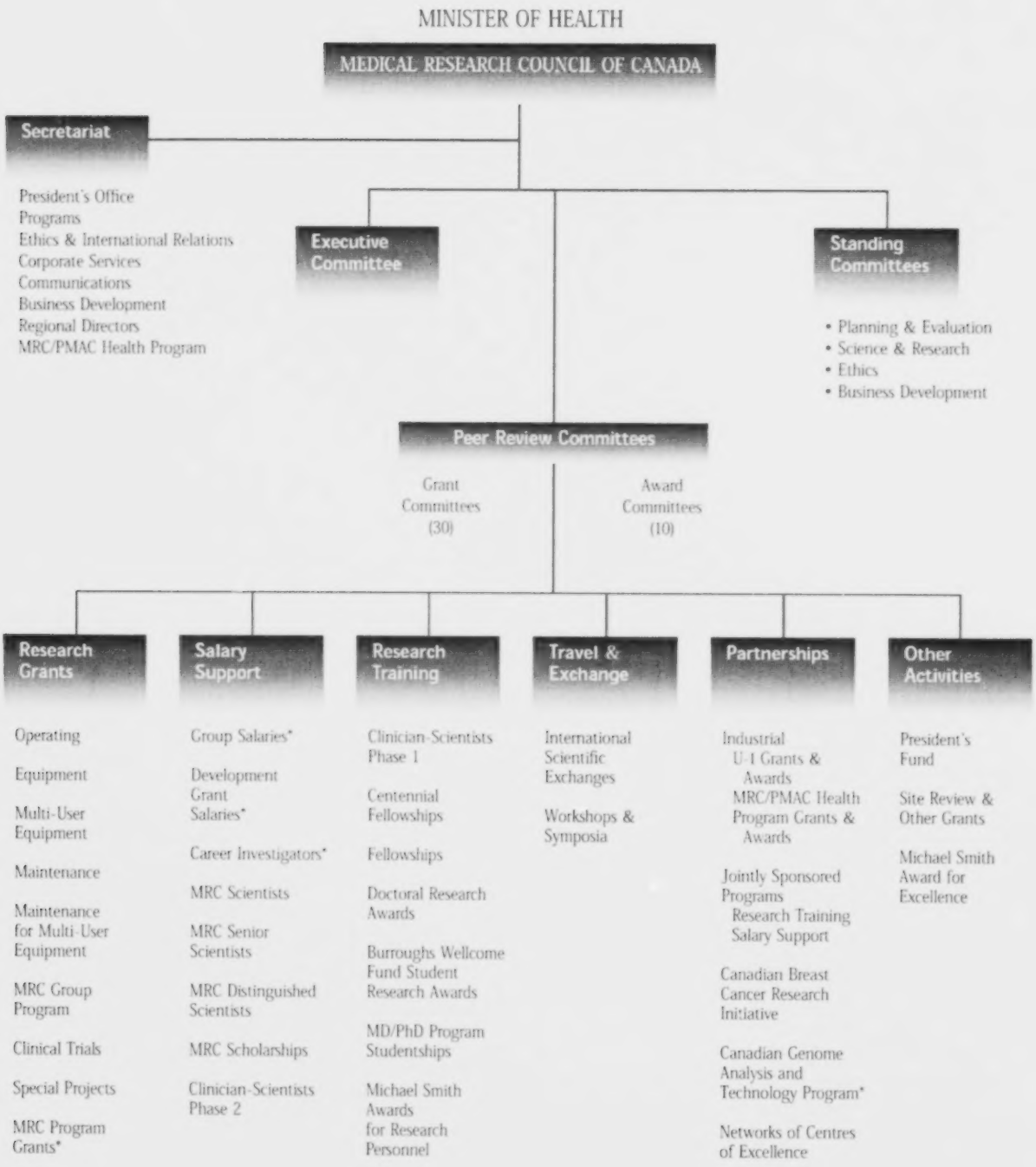
By restoring MRC's core funding to 1994-95 levels, the government has recognized the need for Canada to have a more competitive research funding base. Only through continued reinvestment in this vital sector can the government succeed in developing a knowledge-based economy for Canada. The Canadian public has made it clear on numerous occasions that it places a great deal of importance on the Canadian health care system and scientific advances in this area. Canadians are well aware that research grants eventually lead to new treatments, better knowledge of the determinants of health and an improvement in the capacity of Canadians to live well; consequently, they want the government to make this a national priority. MRC "trusts the people" in this regard.

If the creation of health research partnerships involving Canadian researchers is to have the desired impact, it must be supported by funding at an internationally competitive level. It is a question of the well-being of this Canadian area of excellence in research and, even more important, of the well-being of Canadians. To *promote* the creation of a framework which will make it possible to maximize the country's financial and human resources, to *assist* our outstanding researchers to devote their full potential to contribute to public health, to *undertake* the health challenges of the new millennium with the help of a new health research framework and to *advise* the government in this task of crucial importance for the well-being of Canadians – these are MRC's immediate and long-term goals.

The next time you see a picture of researchers in white lab coats, remember that they are working for all of us and that the support they need from us is not a matter of science fiction. It is a vital necessity. In today's world, the researcher may also be a computer programmer, a community health worker, a clinician testing and applying those new discoveries, those new molecules or those new ideas in the community. At MRC, our job is to help all of them to help you live well.

At the University of Montreal, the research of Doctor Sylvain Chemtob is focussed on defective autoregulation of cerebral flow in newborns. Some of his recent findings will have an impact on the prevention of intraventricular hemorrhage in premature babies. (See page 31 for other achievements in health research.)

MRC Organization and Program Chart



* Closed to new applicants

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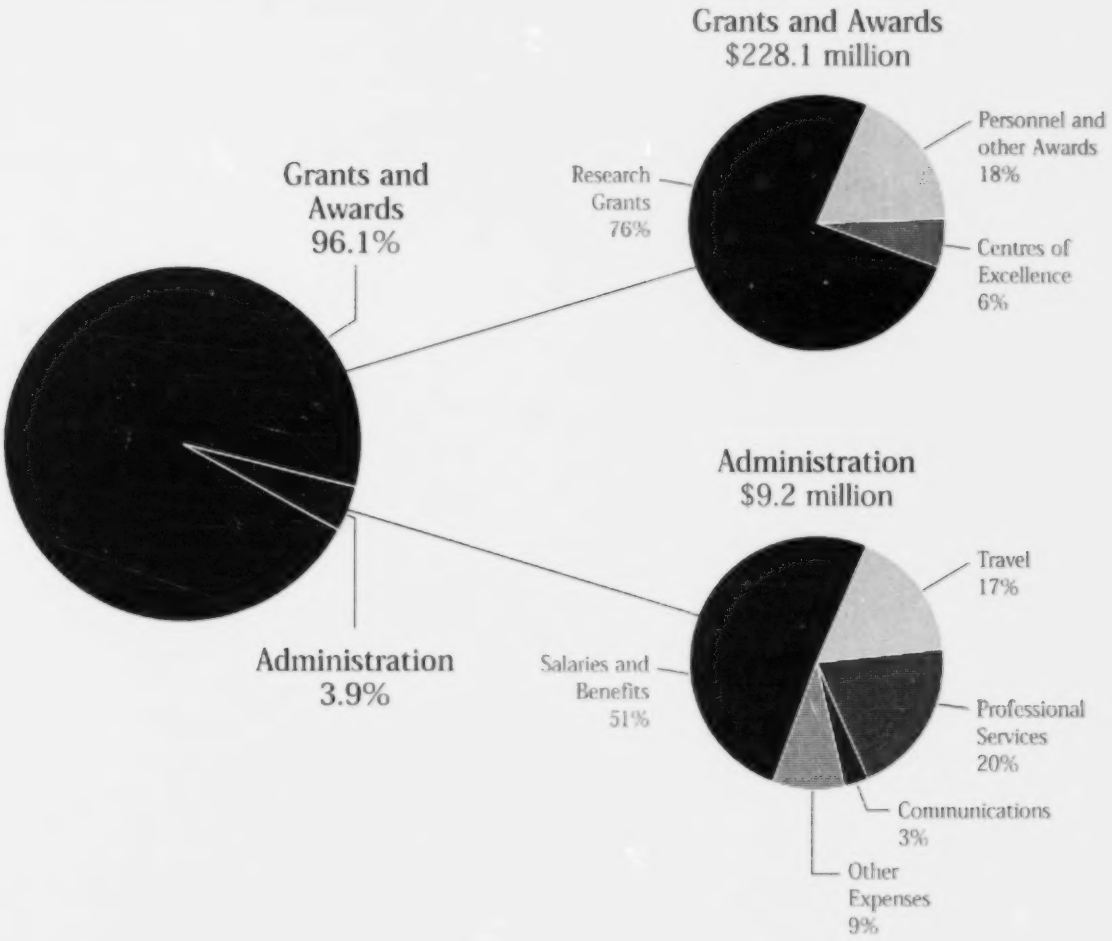
Statistical and Financial Data

MRC Expenditures, 1997-98

Total Expenditures
1997-98
$237.3 million



EXPENDITURES BY UNIVERSITY AND MRC PROGRAM 1997-98

(in thousands of dollars)

	GRANTS				MULTI-DISCIPLINARY			SALARY SUPPORT								
	Operating Grants[1]	Special Projects	MRC Genome	Universities Industry Grants[2]	MRC Groups	Program Grants	Development Grants[3]	MRC Groups	Development Grants	Career Investigators	Distinguished Scientists	Senior Scientists	MRC Scientists[3]	Scholarships	Clinician Scientists Phase 2	Health Salary Support Programs[3]
BRITISH COLUMBIA																
British Columbia	11,920	–	–	321	468	394	–	–	80	87	50	50	409	641	195	23
Simon Fraser	266	–	–	–	–	–	–	–	–	–	–	–	62	–	–	–
U. College of the Cariboo	39	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Victoria	400	–	–	19	–	–	–	–	–	–	–	–	–	–	–	–
ALBERTA																
Alberta	10,502	–	–	239	921	468	–	–	44	–	88	75	317	894	–	86
Alberta Cancer Board	141	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Calgary	7,578	–	25	131	1,039	–	42	–	118	–	50	138	184	391	103	181
Lethbridge	110	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SASKATCHEWAN																
Saskatchewan	1,534	–	–	–	–	–	–	–	196	–	–	–	–	46	–	13
Regina	51	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MANITOBA																
Manitoba	3,889	44	–	–	1,853	190	147	293	83	89	–	88	238	143	74	–
ONTARIO																
Brock	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Carleton	131	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Guelph	676	–	–	–	–	–	–	–	–	–	–	–	–	58	–	–
Laurentian	31	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
McMaster	7,479	100	–	1,968	–	–	–	–	–	–	–	50	317	85	64	70
Northeastern Ont. Reg. Cancer Ctre.	9	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ottawa	4,670	–	–	336	611	188	26	–	262	20	50	–	261	551	–	60
Queen's	3,860	–	–	99	394	–	–	13	35	–	–	–	51	284	–	39
Ryerson	–	95	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Trent	67	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Toronto	29,153	194	–	907	5,105	516	–	563	76	23	200	100	732	1,653	272	211
Waterloo	173	–	–	–	–	–	–	–	–	–	–	–	–	56	–	–
Western Ontario	6,662	–	–	30	1,476	146	41	408	316	86	–	50	211	515	–	20
York	415	–	–	–	–	–	–	–	–	–	–	–	–	59	–	–
QUEBEC																
Concordia	480	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Laval	6,040	–	–	75	1,341	243	–	–	71	–	50	–	181	451	–	70
McGill	21,040	1,030	137	721	1,857	394	39	–	57	186	179	175	811	1,221	250	44
Montréal	12,702	388	–	305	2,436	827	108	490	360	93	50	–	403	706	102	122
Univ. du Québec à Montréal	494	–	–	77	–	–	–	–	–	–	–	–	–	58	–	–
Univ. du Québec à Rimouski	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Sherbrooke	3,139	–	–	2	1,354	–	–	79	30	90	46	–	65	64	–	–
NEW BRUNSWICK																
New Brunswick	84	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PRINCE EDWARD ISLAND																
Prince Edward Island	56	–	–	–	–	–	–	–	–	–	–	–	–	6	–	–
NOVA SCOTIA																
Dalhousie	3,859	–	228	101	–	421	124	–	193	–	–	–	15	116	–	68
Mount Saint Vincent	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
NEWFOUNDLAND																
Memorial	1,043	–	–	–	–	–	–	–	118	–	–	138	–	–	–	–
OTHERS	3,962	401	–	11	–	–	–	–	–	–	–	–	–	–	–	–
OUTSIDE CANADA	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
GRAND TOTAL*	142,693	2,251	390	5,340	18,856	3,787	528	1,847	2,037	673	762	863	4,256	7,997	1,060	1,007

1. Includes Maintenance ($3,694), Equipment ($3,388), Health Services Research ($2,000), Breast Cancer ($1,962)
2. Includes MRC/PMAC Health Program ($5,456)
3. Includes Regional Partnerships Program ($155)

	RESEARCH TRAINING									
	Clinician Scientists Phase 1	Fellowships[4,1]	Studentships	Burroughs Wellcome Student Research Fund	U I Training Awards[2]	TRAVEL & EXCHANGE[5]	OTHER ACTIVITIES[6]	TOTAL CORE PROGRAMS	NETWORKS OF CENTRES OF EXCELLENCE	TOTAL ALL PROGRAMS
BRITISH COLUMBIA										
British Columbia	11	390	505	40	49	7	–	15,641	2,756	18,398
Simon Fraser	–	–	49	–	–	–	–	398	–	398
U. College of the Cariboo	–	–	–	–	–	–	–	39	–	39
Victoria	–	–	37	–	–	1	–	458	–	458
ALBERTA										
Alberta	–	299	360	27	34	5	2	14,361	1,575	15,936
Alberta Cancer Board	–	–	–	–	–	–	–	141	–	141
Calgary	32	298	247	–	25	3	20	10,605	1,433	12,038
Lethbridge	–	–	–	–	–	–	–	110	–	110
SASKATCHEWAN										
Saskatchewan	–	75	36	19	17	–	329	2,264	–	2,264
Regina	–	–	–	–	–	–	–	51	–	51
MANITOBA										
Manitoba	–	35	224	27	39	2	52	7,511	–	7,511
ONTARIO										
Brock	–	–	–	–	–	–	–	4	–	4
Carleton	–	–	–	–	–	–	–	131	–	131
Guelph	–	60	13	–	–	–	–	808	–	808
Laurentian	–	–	–	–	–	–	–	31	–	31
McMaster	–	264	182	17	11	1	–	10,610	1,800	12,410
Northeastern Ont. Reg. Cancer Ctre.	–	–	–	–	–	–	–	9	–	9
Ottawa	–	233	80	15	14	7	–	7,383	–	7,383
Queen's	47	45	230	15	13	5	–	5,129	–	5,129
Ryerson	–	–	–	–	–	–	–	95	–	95
Trent	–	–	–	–	–	–	–	67	–	67
Toronto	238	2,052	1,456	68	87	10	4	43,618	–	43,618
Waterloo	–	–	–	–	–	–	–	229	–	229
Western Ontario	–	145	243	24	12	1	–	10,385	–	10,385
York	–	–	51	–	–	–	–	526	–	526
QUEBEC										
Concordia	–	–	78	–	–	–	–	558	–	558
Laval	–	125	357	25	30	3	–	9,061	–	9,061
McGill	72	952	1,031	38	58	15	10	30,316	5,954	36,269
Montreal	–	542	470	43	74	16	–	20,237	–	20,237
Univ. du Québec à Montréal	–	22	16	–	–	4	–	670	–	670
Univ. du Québec à Rimouski	–	28	–	–	–	–	–	28	–	28
Sherbrooke	–	15	81	12	11	7	–	4,995	–	4,995
NEW BRUNSWICK										
New Brunswick	–	–	6	–	–	–	–	91	–	91
PRINCE EDWARD ISLAND										
Prince Edward Island	–	–	–	–	–	–	–	62	–	62
NOVA SCOTIA										
Dalhousie	–	43	157	23	18	5	3	5,372	–	5,372
Mount Saint Vincent	–	–	–	–	–	–	–	10	–	10
NEWFOUNDLAND										
Memorial	–	–	11	12	21	–	–	1,342	–	1,342
OTHERS	–	30	–	–	105	191	1,806	6,505	–	6,505
OUTSIDE CANADA	719	3,950	16	–	38	–	–	4,722	–	4,722
GRAND TOTAL*	**1,119**	**9,603**	**5,936**	**404**	**654**	**282**	**2,227**	**214,573**	**13,518**	**228,091**

4. Includes Dental Fellowships ($85); Centennial Fellowships($787)
5. Includes Visiting Scientists ($163); Symposia ($119)
6. Includes President's Fund ($550); Other Grants ($1,195); Canadian Council on Animal Care ($482)
* Some additions may not agree due to rounding.

Number of Grants and Awards

1996-97 and 1997-98

	1996-97 Grants and Awards		1997-98 Number of Grants and Awards			Total	
	Number	Amount $000	Continuing	Renewals	New	Number	Amount $000
GRANTS ENVELOPE							
Operating	2,244	133,136	1,291	433	461	2,185	131,649
Maintenance	66	2,494	36	14	7	57	3,694
Equipment	12	929	–	–	32	32	3,388
Health Services Research Fund	1	2,000	1	–	–	1	2,000
Breast Cancer Research Initiative	–	–	1	–	–	1	1,962
Special Projects	9	2,468	6	2	2	10	2,251
MRC Genome	27	3,012	3	–	–	3	390
University-Industry Grants	139	5,168	94	2	39	135	5,340
	2,498	149,207	1,432	451	541	2,424	150,675
MULTI-DISCIPLINARY ENVELOPE							
MRC Groups	27	16,001	24	7	3	34	18,856
Program Grants	22	7,606	11	2	–	13	3,787
Development Grants & Regional Partnerships	20	987	11	–	8	19	528
	69	23,994	46	9	11	66	23,170
SALARY SUPPORT ENVELOPE							
MRC Groups	38	2,724	29	–	–	29	1,847
Development Grants	53	2,574	41	–	2	43	2,037
Career Investigators	13	882	8	1	–	9	673
Distinguished Scientists	9	400	9	–	8	17	762
Senior Scientists	12	518	13	–	7	20	863
MRC Scientists	67	3,948	63	–	12	75	4,256
Scholarships	187	8,746	160	–	8	168	7,997
Clinician Scientists Phase 2	17	1,027	13	–	1	14	1,060
U-I Salary Support Programs	29	971	32	–	22	54	1,007
	425	21,790	368	1	60	429	20,502
RESEARCH TRAINING ENVELOPE							
Clinician Scientists Phase 1	31	1,162	22	3	4	29	1,119
Centennial Fellowships	22	676	9	–	16	25	787
Fellowships	445	10,065	283	–	108	391	8,731
Dental Fellowships	6	164	3	–	–	3	85
Studentships	455	5,221	323	–	155	478	5,936
Burroughs Wellcome Student Research Fund	308	442	–	–	303	303	404
U-I Training Awards	101	557	54	–	67	121	654
	1,368	18,287	694	3	653	1,350	17,717
TRAVEL AND EXCHANGE ENVELOPE							
Visiting Scientists	53	175	–	–	44	44	163
Symposia & Workshops	24	102	–	–	25	25	119
	77	277	0	0	69	69	282
OTHER ACTIVITIES							
President's Fund	41	566	1	–	30	31	550
Grants to Other Organizations	7	4,436	3	1	2	6	1,677
	48	5,002	4	1	32	37	2,227
TOTAL CORE PROGRAMS	4,485	218,557	2,544	465	1,366	4,375	214,573
Genome Programs	3	194	–	–	–	0	
Networks of Centres of Excellence	6	14,704	–	6	–	6	13,518
	9	15,198	0	6	0	6	13,518
TOTAL ALL PROGRAMS*	4,494	233,755	2,544	471	1,366	4,381	228,091
PERCENTAGE OF 1997-98 TOTAL			58.1%	10.8%	31.2%	100.0%	100.0%

*Some additions may not agree due to rounding

Expenditures by MRC Program, 1995-96 to 1997-98 and Category of Support

(in thousands of dollars)

	EXPENDITURES			1997-98 CATEGORY OF SUPPORT				
	1995-96	1996-97	1997-98	Operating	Equipment	Salary Benefits & Stipends	Research Allowances	Travel, Honoraria & Other
GRANTS ENVELOPE								
Operating	134,823	133,136	131,649	128,249	3,399	–	–	–
Maintenance	2,803	2,494	3,694	2,360	1,334	–	–	–
Equipment	797	929	3,388	–	3,388	–	–	–
Health Services Research	0	2,000	2,000	2,000	–	–	–	–
Breast Cancer Research Initiative	0	0	1,962	1,962	–	–	–	–
Special Projects	2,248	2,468	2,251	2,059	192	–	–	–
MRC Genome	2,111	3,012	390	374	–	16	–	–
University-Industry Grants	5,253	5,168	5,340	5,314	–	–	–	26
	148,035	**149,207**	**150,675**	**142,319**	**8,313**	**16**	**0**	**26**
MULTI-DISCIPLINARY ENVELOPE								
MRC Groups (Operating & Equipment Only)	15,010	16,001	18,856	18,000	856	–	–	–
Program Grants (Operating & Equipment Only)	11,548	7,006	3,787	3,787	–	–	–	–
Development Grants – Old	17	0	0	–	–	–	–	–
Development Grants – New	1,349	987	528	528	–	–	–	–
	27,924	**23,994**	**23,170**	**22,315**	**856**	**0**	**0**	**0**
SALARY SUPPORT ENVELOPE								
Group Salaries	3,457	2,724	1,847	–	–	1,847	–	–
Development Grant Salaries – Old	1,848	1,502	1,119	–	–	1,119	–	–
Development Grant Salaries – New	1,067	1,072	918	–	–	918	–	–
Career Investigators	1,321	882	673	–	–	673	–	–
Distinguished Scientists	104	400	762	–	–	762	–	–
Senior Scientists	225	518	863	–	–	863	–	–
MRC Scientists	3,643	3,948	4,256	–	–	4,256	–	–
Scholarships	8,830	8,746	7,997	–	–	7,900	98	–
Clinician Scientists Phase 2	1,144	1,027	1,060	–	–	820	240	–
U-I Salary Support Programs	932	971	1,007	–	–	1,007	–	–
	22,571	**21,790**	**20,502**	**0**	**0**	**20,165**	**338**	**0**
RESEARCH TRAINING ENVELOPE								
Clinician Scientists Phase 1	1,411	1,162	1,119	–	–	1,036	83	–
Centennial Fellowships	636	676	787	–	–	709	78	–
Fellowships	11,430	10,065	8,731	–	–	8,303	426	2
Dental Fellowships	225	164	85	–	–	82	3	–
Studentships	5,324	5,221	5,936	–	–	5,722	215	–
Burroughs Wellcome Student Research Fund	756	412	404	–	–	404	–	–
U-I Training Awards	614	557	654	–	–	549	105	–
	20,435	**18,287**	**17,717**	**0**	**0**	**16,805**	**909**	**2**
TRAVEL AND EXCHANGE ENVELOPE								
Visiting Scientists	95	175	163	–	–	125	–	38
Visiting Professorships	0	0	0	–	–	–	–	–
Travel Grants, Symposia & Workshops	133	102	119	–	–	–	–	119
	228	**277**	**282**	**0**	**0**	**125**	**0**	**157**
OTHER ACTIVITIES ENVELOPE								
President's Fund	333	566	550	–	–	–	–	550
Grants to Other Organizations	2,626	4,436	1,677	–	–	–	–	1,677
Site Reviews	66	0	0	–	–	–	–	–
	3,025	**5,002**	**2,227**	**0**	**0**	**0**	**0**	**2,227**
TOTAL CORE PROGRAMS	**222,218**	**218,558**	**214,573**	**164,634**	**9,169**	**37,112**	**1,247**	**2,411**
Genome Programs	3,132	494	0	–	–	–	–	–
Networks of Centres of Excellence	17,837	14,704	13,518	13,518	–	–	–	–
	20,968	**15,198**	**13,518**	**13,518**	**0**	**0**	**0**	**0**
TOTAL ALL PROGRAMS*	**243,187**	**233,756**	**228,091**	**178,152**	**9,169**	**37,112**	**1,247**	**2,411**
PERCENTAGE OF 1997-98 TOTAL				**78.1%**	**4.0%**	**16.3%**	**0.5%**	**1.1%**

*Some additions may not agree due to rounding

Distribution of MRC Expenditures by Province

1993-94 to 1997-98

	1993-94		1994-95		1995-96		1996-97		1997-98	
Province	$ (000)	%	$ (000)	%	$ (000)	%	$ (000)	%	$ (000)	%
British Columbia	26,197	10.4	30,017	11.7	24,150	9.9	19,915	8.5	19,292	8.5
Alberta	26,123	10.4	26,533	10.3	28,255	11.6	28,575	12.2	28,225	12.4
Saskatchewan	4,141	1.6	3,337	1.3	3,050	1.3	2,418	1.0	2,315	1.0
Manitoba	9,948	4.0	10,178	4.0	9,123	3.8	8,187	3.5	7,511	3.3
Ontario	86,970	34.6	85,366	33.1	83,761	34.4	82,125	35.1	80,821	35.4
Quebec	79,612	31.7	83,619	32.5	77,699	32.0	72,869	31.2	71,818	31.5
New Brunswick	38	<0.1	22	<0.1	72	<0.1	97	<0.1	91	<0.1
Prince Edward Island	53	<0.1	57	<0.1	54	<0.1	61	<0.1	62	<0.1
Nova Scotia	5,751	2.3	5,641	2.2	5,120	2.1	4,953	2.1	5,383	2.4
Newfoundland	1,956	0.8	1,614	0.6	1,535	0.6	1,584	0.7	1,342	0.6
Others	2,060	0.8	3,089	1.2	3,029	1.2	7,270	3.1	6,505	2.9
Outside Canada	8,439	3.4	8,158	3.2	7,338	3.0	5,702	2.4	4,722	2.1
Total*	251,288	100.0	257,634	100.0	243,187	100.0	233,755	100.0	228,091	100.0

*Some additions may not agree due to rounding

Operating Grants by Area of Research

	Number of Grants				
CLASSIFICATION	Research Grants	Program Grants	MRC Groups	Funding $(000)	Percentage of Total
Bacteriology*	30	-	2	3,563	2.0
Biochemistry	158	2	3	15,154	8.9
Blood	36	-	-	2,921	1.9
Cancer	97	-	1	7,890	3.7
Cardiovascular	173	-	9	15,336	9.7
Cell Biology	154	-	1	11,503	6.8
Dental Science	27	-	1	2,833	1.7
Drug Research	89	-	-	5,541	3.1
Endocrinology	78	-	3	7,595	4.8
Gastrointestinal and Liver	53	1	1	4,450	2.6
Genetics	114	-	1	10,583	5.9
Health Research	61	-	1	3,835	1.7
Hearing	6	-	-	416	0.3
Imaging and Nuclear Medicine	34	-	1	2,242	1.8
Immunology and Transplantation	96	-	1	8,887	5.1
Metabolism (incl. Diabetes)	57	-	1	4,519	2.6
Molecular Biology	143	-	-	12,034	7.1
Musculo-Skeletal	55	-	-	3,587	2.8
Nephrology	25	-	1	2,417	1.7
Neurosciences	306	2	11	27,002	15.0
Nursing	2	-	-	184	0.2
Nutrition	22	-	-	1,266	0.8
Reproduction (incl. Pregnancy)	49	-	2	5,936	3.8
Respiration	77	-	1	6,523	3.7
Virology	43	-	1	3,552	2.0
Vision	33	-	-	1,666	1.0
	2,018	5	42	171,435	100.0*

* Some additions may not agree due to rounding

Figures as at August 1998

Uncertainty due to the Year 2000 Issue

The Year 2000 Issue arises because many computerized systems use two digits rather than four to identify a year. Date-sensitive systems may recognize the year 2000 as 1900 or some other date, resulting in errors when information using year 2000 dates is processed. In addition, similar problems may arise in some systems which use certain dates in 1999 to represent something other than a date. The effects of the Year 2000 Issue may be experienced before, on, or after January 1, 2000 and, if not addressed, the impact on operations and financial reporting may range from minor errors to significant systems failure which could affect an entity's ability to conduct normal business operations. It is not possible to be certain that all aspects of the Year 2000 Issue affecting the entity, including those related to the efforts of customers, suppliers, or other third parties, will be fully resolved.

AUDITOR GENERAL OF CANADA

VÉRIFICATEUR GÉNÉRAL DU CANADA

AUDITOR'S REPORT

To the Medical Research Council
and the Minister of Health

I have audited the statement of operations of the Medical Research Council for the year ended March 31, 1998. This financial statement is the responsibility of the Council's management. My responsibility is to express an opinion on this financial statement based on my audit.

I conducted my audit in accordance with generally accepted auditing standards. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statement is free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statement. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In my opinion, this financial statement presents fairly, in all material respects, the results of operations of the Council for the year ended March 31, 1998 in accordance with the accounting policies set out in Note 2 to the financial statement.

Richard Flageole, FCA
Assistant Auditor General
for the Auditor General of Canada

Ottawa, Canada
June 26, 1998

MANAGEMENT REPORT

We have prepared the accompanying financial statement of the Medical Research Council in accordance with the reporting requirements and standards of the Receiver General for Canada. This financial statement was prepared in accordance with the significant accounting policies set out in Note 2 of the statement, on a basis consistent with that of the preceding year. Some previous year figures have been reclassified to conform to the current year's presentation.

Responsibility for the integrity and objectivity of data in this financial statement rests with the management of the Council. The information included in the financial statement is based on management's best estimates and judgements with due consideration to materiality. To fulfill these accounting and reporting responsibilities, the Council maintains a set of accounts which provides a centralized record of the Council's financial transactions. Financial information contained in the ministerial statements and elsewhere in the *Public Accounts of Canada* is consistent with this financial statement, unless indicated otherwise.

The Council's Corporate Services Directorate develops and disseminates financial management and accounting policies, and issues specific directives which maintain standards of accounting and financial management. The Council maintains systems of financial management and internal control which give due consideration to costs, benefits and risks. They are designed to provide reasonable assurance that transactions are properly authorized by Parliament and are executed in accordance with prescribed regulations, and are properly recorded so as to maintain accountability of Government funds and safeguard the Council's assets. The Council also seeks to assure the objectivity and integrity of data in its financial statement by the careful selection, training and development of qualified staff, by organizational arrangements that provide appropriate divisions of responsibility, and by communication programs aimed at ensuring that its regulations, policies, standards and managerial authorities are understood throughout the organization.

Management presents this financial statement to the Auditor General of Canada, who audits it and provides an independent opinion which has been appended to this financial statement.

The accounting system and financial statement of the Council have evolved over the years to meet the changes in the structure of the grants and scholarships programs and to give improved reporting and control of expenditures relating to those programs.

Approved by:

Alain Gélinas
Manager, Finance & Administration

Guy D'Aloisio
Director, Corporate Services

June 26, 1998

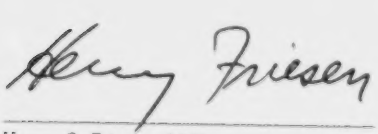
STATEMENT OF OPERATIONS FOR THE YEAR ENDED MARCH 31, 1998

(in thousands of dollars)

	1998	1997
Expenditure		
Grants and Scholarships (See Schedule)		
Grants (Note 3)	150,675	150,926
Multi-Disciplinary	23,170	23,994
Salary Support	20,502	21,790
Research Training	17,717	18,287
Travel and Exchange	282	277
Other Activities (Note 3)	2,227	3,283
Networks of Centres of Excellence	13,518	14,704
Human Genome Program (Note 3)	–	494
	228,091	233,755
Operations		
Salaries and employee benefits	3,314	3,145
Travel (Note 5)	1,441	1,293
Professional and special services	1,334	1,384
Accommodation	295	339
Publications	264	263
Communications	242	244
Materials and supplies	162	128
Furniture and equipment	104	53
Equipment repair and maintenance	85	66
	7,241	6,915
Administration		
Salaries and employee benefits	1,357	1,331
Employee termination benefits	12	60
Professional and special services	475	215
Publications	222	194
Travel (Note 5)	182	270
Accommodation	114	135
Communications	99	103
Materials and supplies	66	54
Furniture and equipment	42	22
Equipment repair and maintenance	35	28
	2,604	2,412
	237,936	243,082
Non-tax revenue		
Refunds of previous years' expenditure	892	398
Adjustment of prior years' PAYE	80	
Sale of crown assets surplus	2	7
Net cost of operations (Note 4)	236,962	242,677

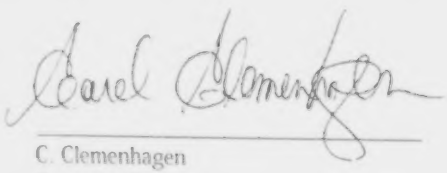
The accompanying notes and schedule are an integral part of this statement.

Approved by the Council:



Henry G. Friesen, M.D.
President

Approved by Management:



C. Clemenhagen
Executive Director

NOTES TO THE STATEMENT OF OPERATIONS
MARCH 31, 1998

1. Authority and purpose

The Medical Research Council was established in 1969 by the Medical Research Council Act and is a departmental corporation named in Schedule II to the Financial Administration Act. The objective of the Council is to help attain the quality and scale of research in the health sciences essential to the maintenance and improvement of health services. The Council's operating and grants expenditures are funded by a budgetary lapsing authority. Employee benefits are authorized by a statutory authority.

2. Significant accounting policies

The statement of operations has been prepared in accordance with the reporting requirements and standards established by the Receiver General for Canada for departmental corporations. The most significant accounting policies are as follows:

(a) Expenditure recognition

Grants and scholarships are charged to expenditure when disbursed. All operating expenditure is recorded on the accrual basis, with the exception of termination benefits and vacation pay which are recorded on the cash basis.

(b) Revenue recognition

Revenue is recorded on the cash basis.

(c) Capital purchases

Acquisitions of capital assets are charged to operating expenditure in the year of purchase.

(d) Services provided without charge from Government departments

Estimates of amounts for services provided without charge from Government departments are included in expenditure.

(e) Refunds of previous years' expenditures

Refunds of previous years' expenditures are recorded as revenues when received and are not deducted from expenditures.

(f) Contributions to the Public Service Superannuation Plan

Employees participate in the Public Service Superannuation Plan administered by the Government of Canada. The employees and the Council contribute equally to the cost of the Plan. Contributions by the Council are charged to expenditure on a current basis.

3. Comparative figures

Some previous year's figures have been reclassified to reflect the current year's presentation. This was done to provide more details on the programs.

(a) In the *Statement of operations* the reclassified figures are as follows:

(in thousands of dollars)

	Revised Classification 1997	Former Classification 1997
Grants	150,926	146,195
Other Activities	3,283	5,002
Human Genome Program	494	3,506

b) In the *Schedule of Grants and Scholarships* the re-classified figures are:

Grants		
Breast Cancer Research Initiative	1,719	–
MRC Genome	3,012	–
Other Activities		
Other Grants	2,717	4,436
Human Genome Program	494	3,506

4. Parliamentary appropriations

	(in thousands of dollars) 1998	1997
Department of Health		
Vote 25 – Grants	228,120	233,763
lapsed	29	8
	228,091	233,755
Vote 20 – Operating expenditure	9,048	8,318
lapsed	430	208
	8,618	8,110
Statutory contributions to employee benefit plans	616	538
Total use of appropriations	237,325	242,403
Add: services provided without charge by government departments	611	679
Less: non-tax revenue	974	405
Net cost of operations	236,962	242,677

5. Travel

Expenditure for travel charged to operations is related to the peer review process and was incurred by the members of 30 grant committees, 10 award committees and the staff of the Council to meet, assess and rate grant and award applications. In addition, travel expenditure incurred by the Council, its executive and standing committees and other non-staff advisory personnel is also charged to operations.

Expenditure for travel charged to administration is for the general support of the Council's administrative activities and includes meetings of ad hoc advisory groups established to study specific issues for the Council. Details are as follows:

	(in thousands of dollars) 1998	1997
Operations:		
Grant Committees	769	732
Standing Committees	120	73
Award Committees	107	88
Regional Retreats	91	–
Site Reviews	72	136
Human Genome	–	39
Council/Executive	53	93
Advisory Groups	44	19
Staff	185	113
	1,441	1,293
Administration:		
Advisory Groups	83	196
Staff	99	74
	182	270

All members of the Council and the committees listed above serve without remuneration. Only their travel expenses are reimbursed by the Council.

6. Trust funds

As provided for in Section 4(3) of the Medical Research Council Act, the Council administers a number of trust funds separately from the activities funded through parliamentary appropriations. The purpose and accounting for these funds is described below. The balance of these funds is represented by deposit with the Receiver General for Canada.

(a) In 1974, tthe Council received $75,000 from an anonymous donor to establish a fund. The interest received is used for the payment of grants for research in the fields of dyskinesia and torticollis. Other donations received in prior years not earmarked for specific projects have also been credited to this fund.

(b) A fund was established to record donations and contributions received from organizations and individuals for biomedical research. When the Council receives such monies, they are placed in trust and disbursed in accordance with agreements between tthe contributor and the Council.

The transactions relating to these two funds are as follows:

(in thousands of dollars)

	Dyskinesia & Torticollis		Donations for Biomedical Research	
	1998	1997	1998	1997
Balance:				
Beginning of year	84	81	4,288	2,556
Add:				
Donations received	–	–	2,723	4,197
Interest received	3	3	112	86
Less:				
Grants paid	9	–	5,480	2,551
Balance:				
End of year	**78**	**84**	**1,643**	**4,288**

7. Commitments

The Council iis committed to disburse grants and scholarships in future years subject to the provision of funds by Parliament. Future year commitments are as follows:

(in thousands of dollars)

Year of Payment	1998	1997
1997-1998	–	200,225
1998-1999	210,280	137,947
1999-2000	137,959	75,109
2000-2001	81,754	35,503
2001-2002	31,297	13,780
2002-2003	11,601	1,280
2003-2004	1,375	–
	474,266	**463,844**

SCHEDULE OF GRANTS AND SCHOLARSHIPS FOR THE YEAR ENDED MARCH 31, 1998

(in thousands of dollars)

	1998	1997
Grants		
Operating	131,649	133,136
Maintenance	3,694	2,494
Equipment	3,388	929
Health Services Research	2,000	2,000
Breast Cancer Research Initiative (Note 3)	1,962	1,719
MRC Genome (Note 3)	390	3,012
Special Projects	2,252	2,468
University-Industry Grants	5,340	5,168
	150,675	150,926
Multi-Disciplinary		
MRC Groups	18,856	16,001
Program Grants	3,786	7,006
Development Grants	528	987
	23,170	23,994
Salary Support		
MRC Groups	1,847	2,724
Development Grants	2,037	2,574
Career Investigators	673	882
MRC Scientists	4,256	3,948
Senior Scientists	863	518
Distinguished Scientists	762	400
Scholarships	7,997	8,746
Clinician Scientists 2	1,060	1,027
University-Industry Salary Support	1,007	971
	20,502	21,790
Research Training		
Clinician Scientists 1	1,119	1,162
Centennial Fellowships	787	676
Fellowships	8,732	10,065
Dental Fellowships	85	164
Studentships	5,936	5,221
Undergraduate Scholarships	404	442
University-Industry Training Awards	654	557
	17,717	18,287
Travel and Exchange		
Visiting Scientists and Professorships	163	175
Travel Grants, Symposia and Workshops	119	102
	282	277
Other Activities		
President's Fund	550	566
Other Grants (Note 3)	1,677	2,717
	2,227	3,283
All Core Programs	214,573	218,557
Networks of Centres of Excellence	13,518	14,704
Human Genome Program (Note 3)	-	494
	228,091	233,755

Grants and Awards Peer Review Committees

Council has approved the membership of the following grants and awards peer review committees for 1997-98. Only the professional degree and/or PhD (or equivalent) is given; the university affiliation follows the name (and/or if applicable, the name of the company is mentioned in the case of university-industry committee members).

BEHAVIOURAL SCIENCES "A"
SCIENCES DU COMPORTEMENT « A »

Melvyn Goodale, Ph.D. . . . . Western Ontario
(Chairperson/présidence)
Michael Meaney, Ph.D. . . . . Douglas Hospital
(Scientific Officer/adjoint scientifique)
Shimon Amir, Ph.D. . . . . Concordia
Peter Cain, Ph.D. . . . . Western Ontario
Alain Gratton, Ph.D. . . . . Douglas Hospital
Zulfiquar Merali, Ph.D. . . . . Ottawa
George Robertson, Ph.D. . . . . Ottawa
Bruce Schneider, Ph.D. . . . . Toronto
Carlyle Smith, Ph.D. . . . . Trent
Esther Strauss, Ph.D. . . . . Victoria
Henry Szechtman, Ph.D. . . . . McMaster
Franco Vaccarino, Ph.D. . . . . Toronto
Robert Zatorre, Ph.D. . . . . McGill

BEHAVIOURAL SCIENCES "B"
SCIENCES DU COMPORTEMENT « B »

Garry Martin, Ph.D. . . . . Manitoba
(Chairperson/présidence)
Roberta Palmour, Ph.D. . . . . McGill
(Scientific Officer/adjoint scientifique)
Donald Addington, Ph.D. . . . . Calgary
Phillipe Baruch, M.D. . . . . Laval
Roger Bland, MBCHB . . . . . Alberta
Gregory Brown, M.D., Ph.D. . . . . Toronto
Howard Chertkow, M.D. . . . . McGill
Kathryn Gill, Ph.D. . . . . McGill
Denis Richard, Ph.D. . . . . Laval
Donald Stuss, Ph.D. . . . . Toronto
Rosemary Tannock, Ph.D. . . . . Toronto
Peter Williamson, M.D. . . . . Western Ontario

Comités d'examen par les pairs des subventions et des bourses

Le Conseil a approuvé la nomination des personnes suivantes à titre de membres des comités d'examen par les pairs des subventions et des bourses pour l'année 1997-1998. On indique uniquement le diplôme professionnel ou le doctorat (ou un diplôme équivalent); le nom est suivi de l'université à laquelle appartient le membre en question; dans le cas du comité université-industrie, on mentionne la société, le cas échéant.

BIOCHEMISTRY & MOLECULAR BIOLOGY "A"
BIOCHIMIE ET BIOLOGIE MOLÉCULAIRE « A »

Charles Deber, Ph.D. . . . . Toronto
(Chairperson/présidence)
Benoit Chabot, Ph.D. . . . . Sherbrooke
(Scientific Officer/adjoint scientifique)
John Baenziger, Ph.D. . . . . Ottawa
David Byers, Ph.D. . . . . Dalhousie
David Evans, Ph.D. . . . . Guelph
Bruce Hill, Ph.D. . . . . Queen's
Bernard Lemire, Ph.D. . . . . Alberta
George Mackie, Ph.D. . . . . British Columbia
David Rose, Ph.D. . . . . Toronto
Gary Shaw, Ph.D. . . . . Western Ontario
Alice Vrielink, Ph.D. . . . . McGill

BIOCHEMISTRY & MOLECULAR BIOLOGY "B"
BIOCHIMIE ET BIOLOGIE MOLÉCULAIRE « B »

James Smiley, Ph.D. . . . . Alberta
(Chairperson/présidence)
Eric Rassart, Ph.D. . . . . Québec à Montréal
(Scientific Officer/adjoint scientifique)
Richard Collins, Ph.D. . . . . Toronto
Patrick Dennis, Ph.D. . . . . British Columbia
Hara Ghosh, Ph.D. . . . . McMaster
John Hiscott, Ph.D. . . . . McGill
C. James Ingles, Ph.D. . . . . Toronto
Barbara Papadopoulou, Ph.D. . . . . Laval
John P. Phillips, Ph.D. . . . . Guelph
Martine Raymond, Ph.D. . . . . Montréal
James Stone, Ph.D. . . . . Alberta
Paul Walton, Ph.D. . . . . Western Ontario

Achievements in health research

Réalisations dans la recherche en santé

At Université Laval, Marc Germain is studying risk factors and tests for diagnosing an infection that can cause premature labour in pregnant women.

À l'Université Laval, Marc Germain étudie des facteurs de risque et des tests qui permettent de diagnostiquer une infection qui, chez les femmes enceintes, favorise les accouchements prématurés.

At Hôpital du Sacré-Coeur, Montreal, Marie Dumont is studying the influence of our biological clock on the quality of our sleep as well as on the quality of our awakeness. She hopes to develop therapies to help us improve the quality of our waking time.

À l'Hôpital du Sacré-Coeur, à Montréal, Marie Dumont étudie l'influence de notre horloge biologique sur la qualité de notre sommeil et de notre état d'éveil. Son objectif est de mettre au point des thérapies qui nous aideront à améliorer la qualité de nos périodes d'éveil.

BIOMEDICAL ENGINEERING
GÉNIE BIOMÉDICAL

Martin Yaffe, Ph.D. ..... Toronto
(Chairperson/présidence)
John J.T. Bryant, Ph.D. ..... Queen's
(Scientific Officer/adjoint scientifique)
Jason Bates, Ph.D. ..... McGill
Peter Burns, Ph.D. ..... Toronto
Henrietta Galiana, Ph.D. ..... McGill
Walter Herzog, Ph.D. ..... Calgary
B. Milan Horacek, Ph.D. ..... Dalhousie
Hubert Labelle, M.D. ..... Montréal
Frank Prato, Ph.D. ..... Western Ontario
Thomas Ruth, Ph.D. ..... British Columbia
John K. Saunders, Ph.D. ..... National Research Council (Winnipeg)
Christopher Thompson, D.Sc. ..... McGill

CANCER "A"

Richard Singer, Ph.D. ..... Dalhousie
(Chairperson/présidence)
Brenda Andrews, Ph.D. ..... Toronto
(Scientific Officer/adjoint scientifique)
André Bedard, Ph.D. ..... York
Peter Greer, Ph.D. ..... Queen's
Paul Hamel, Ph.D. ..... Toronto
David Litchfield, Ph.D. ..... Western Ontario
Anne-Marie Mes-Masson, Ph.D. ..... Montreal
Daniela Rotin, Ph.D. ..... Toronto
Michel L. Tremblay, Ph.D. ..... McGill
James Woodgett, Ph.D. ..... Toronto

CANCER "B"

Gerald Batist, M.D. ..... McGill
(Chairperson/présidence)
P. David Josephy, Ph.D. ..... Guelph
(Scientific Officer/adjoint scientifique)
Susan Cole, Ph.D. ..... Queen's
Mladen Korbelik, Ph.D. ..... British Columbia
Pierre Laneuville, M.D. ..... McGill
Norman Lassam, M.D., Ph.D. ..... Toronto
Richard Momparler, Ph.D. ..... Montréal
David Murray, Ph.D. ..... Alberta
F. William Orr, M.D. ..... Manitoba
Dindial Ramotar, Ph.D. ..... Laval
Mark Schiffman, Ph.D. ..... NIH (Bethesda)
Ming-Sound Tsao, M.D. ..... Toronto

CARDIOVASCULAR SYSTEM "A"
APPAREIL CARDIOVASCULAIRE « A »

Christopher Triggle, Ph.D. ..... Calgary
(Chairperson/présidence)
Grant Pierce, Ph.D. ..... Manitoba
(Scientific Officer/adjoint scientifique)
Madhu Anand-Srivastava, Ph.D. ..... Montréal
Peter Backx, DVM., Ph.D. ..... Toronto
Ross Feldman, M.D. ..... Western Ontario
Elissavet Kardami, Ph.D. ..... Manitoba
Philip Marsden, M.D. ..... Toronto
Thomas G. Parker, M.D. ..... Toronto Hospital
Thomas Podor, Ph.D. ..... McMaster
Timothy Reudelhuber, Ph.D. ..... Montréal
Alvin Shrier, Ph.D. ..... McGill
Balwant Tuana, Ph.D. ..... Ottawa

CARDIOVASCULAR SYSTEM "B"
APPAREIL CARDIOVASCULAIRE « B »

Flavio Coceani, M.D. ..... Toronto
(Chairperson/présidence)
Robert Sheldon, M.D., Ph.D. ..... Calgary
(Scientific Officer/adjoint scientifique)
J. Malcolm O. Arnold, M.D. ..... Western Ontario
Hélène Bachelard, Ph.D. ..... Laval
Sandra Davidge, Ph.D. ..... Alberta
Pedro D'Orléans-Juste, Ph.D. ..... Sherbrooke
Paul Kubes, Ph.D. ..... Calgary
W. Wayne Lautt, Ph.D. ..... Manitoba
Peter Liu, M.D. ..... Toronto Hospital
Gary Lopaschuk, Ph.D. ..... Alberta
Bradley Strauss, M.D., Ph.D. ..... Toronto
Michael Ward, M.D., Ph.D. ..... McGill

CELL PHYSIOLOGY
PHYSIOLOGIE CELLULAIRE

Wayne Giles, Ph.D. ..... Calgary
(Chairperson/présidence)
Reinhart Reithmeier, Ph.D. ..... Toronto
(Scientific Officer/adjoint scientifique)
Guy Boileau, Ph.D. ..... Montréal
David Brindley, Ph.D. ..... Alberta
William C. Cole, Ph.D. ..... Calgary
Shoukat Dedhar, Ph.D. ..... British Columbia
John Hanrahan, Ph.D. ..... McGill
Bernard Jasmin, Ph.D. ..... Ottawa
Amira Klip, Ph.D. ..... Toronto
Catherine Morris, Ph.D. ..... Ottawa
Paul Naccache, Ph.D. ..... Laval
Colin Rasmussen, Ph.D. ..... Saskatchewan
Eric Rousseau, Ph.D. ..... Sherbrooke

CLINICAL INVESTIGATION
RECHERCHE CLINIQUE

Harry Bard, M.D. . . . . Montréal
(Chairperson/présidence)
James G. Wright, M.D. . . . . Toronto
(Scientific Officer/adjoint scientifique)
Tassos Anastassiades, M.D., Ph.D. . . . . Queen's
Evanne Casson, Ph.D. . . . . Ottawa
Balwantray Chauhan, Ph.D. . . . . Dalhousie
Sylvain Chemtob, M.D., Ph.D. . . . . Montréal
Artur deBrum Fernandes, M.D., Ph.D. . . . Sherbrooke
Lucie Germain, Ph.D. . . . . Laval
Shabih Hasan, M.D. . . . . Calgary
Alexandra Kirkley, M.D. . . . . Western Ontario
Walter Maksymowych, MBCHB . . . . . Alberta
Bryan Richardson, M.D. . . . . Western Ontario

CLINICAL TRIALS
ESSAIS CLINIQUES

Salim Yusuf, MBBS . . . . . McMaster
(Chairperson/présidence)
Stanley Shapiro, Ph.D. . . . . McGill
(Scientific Officer/adjoint scientifique)
Julie Buring, Sc.D. . . . . Harvard
Eduardo Franco, Ph.D. . . . . McGill
Stephen Fremes, M.D. . . . . Toronto
Gordon Guyatt, M.D. . . . . McMaster
Ellen Hodnett, Ph.D. . . . . Toronto
Michael Klein, M.D. . . . . British Columbia
Frans Leenen, M.D., Ph.D. . . . . Ottawa
Beverley O'Brien, Ph.D. . . . . Alberta
Jeffrey Probstfield, M.D. . . . . Fred Hutchinson Cancer Research Centre (Washington)
Carol Richards, Ph.D. . . . . Laval
Robin Roberts, B. Tech, M. Tech. . . . . McMaster
Ian Stiell, M.D. . . . . Ottawa
D. George Wyse, M.D., Ph.D. . . . . Calgary

DENTAL SCIENCES
SCIENCES DENTAIRES

George Bowden, Ph.D. . . . . Manitoba
(Chairperson/présidence)
Christopher McCulloch, DDS., Ph.D. . . . . Toronto
(Scientific Officer/adjoint scientifique)
Noella Deslauriers, Ph.D. . . . . Laval
Gary Duncan, DDS., Ph.D. . . . . Montréal
Michel Frenette, Ph.D. . . . . Laval
Song Fong Lee, Ph.D. . . . . Dalhousie
Marc McKee, Ph.D. . . . . Montréal
Christopher Overall, Ph.D. . . . . British Columbia
Robert Pilliar, Ph.D. . . . . Toronto
Jaroslav Sodek, Ph.D. . . . . Toronto

ENDOCRINOLOGY
ENDOCRINOLOGIE

Daniel Drucker, M.D. . . . . Toronto
(Chairperson/présidence)
Jacquetta Trasler, MDCM, Ph.D. . . . . McGill
(Scientific Officer/adjoint scientifique)
Alain Bélanger, Ph.D. . . . . Laval
Hugh Bennett, Ph.D. . . . . McGill
Harry Elsholtz, Ph.D. . . . . Toronto
Anthony Hollenberg, M.D. . . . . Beth Israel Hospital (Boston)
Ursula Kaiser, M.D. . . . Brigham & Women's Hospital (Boston)
Donald Killinger, M.D., Ph.D. . . . . Western Ontario
André Lacroix, M.D. . . . . Montréal
Jean-Guy Lehoux, Ph.D. . . . . Sherbrooke
Peter Leung, Ph.D. . . . . British Columbia
Paul R. Murphy, Ph.D. . . . . Dalhousie
David Olson, Ph.D. . . . . Alberta
Serge Rivest, Ph.D. . . . . Laval

EXPERIMENTAL MEDICINE
MÉDECINE EXPÉRIMENTALE

Geoffrey Hendy, Ph.D. . . . . McGill
(Chairperson/présidence)
Barry Tepperman, Ph.D. . . . . Western Ontario
(Scientific Officer/adjoint scientifique)
Kevin Burns, MDCM . . . . . Ottawa
David E.C. Cole, M.D., Ph.D. . . . . Toronto
Edward Conway, M.D. . . . . Toronto Hospital
Andrey Cybulsky, M.D. . . . . McGill
Jan Huizinga, Ph.D. . . . . McMaster
Norman Iscove, M.D., Ph.D. . . . . Toronto
Richard Kremer, M.D., Ph.D. . . . . McGill
Peter Kvietys, Ph.D. . . . . Western Ontario
Samuel Lee, M.D. . . . . Calgary
Victor Plourde, M.D., Ph.D. . . . . Montréal
Stephen Vanner, M.D. . . . . Queen's

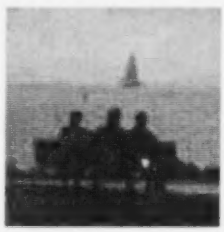
GENETICS
GÉNÉTIQUE

Jane Evans, Ph.D. . . . . Manitoba
(Chairperson/présidence)
Roderick McInnes, M.D., Ph.D. . . . . Toronto
(Scientific Officer/adjoint scientifique)
L. Leigh Field, M.D., Ph.D. . . . . Calgary
Vincent Giguere, Ph.D. . . . . McGill
Philippe Gros, Ph.D. . . . . McGill
Arthur Hilliker, Ph.D. . . . . Guelph
Alexander MacKenzie, M.D., Ph.D. . . . . Ottawa
Dixie Mager, Ph.D. . . . . British Columbia
Grant Mitchell, M.D. . . . . Montréal
David Pilgrim, Ph.D. . . . . Alberta
Peter Ray, Ph.D. . . . . Toronto
Michael Rudnicki, Ph.D. . . . . McMaster
Peter St. George-Hyslop, M.D. . . . . Toronto
Barbara Triggs-Raine, Ph.D. . . . . Manitoba

At the University of Ottawa, Daniel Sparks is leading a team which is trying to discover what chemical changes are linked to the failure to lower cholesterol and heart problems.

À l'Université d'Ottawa, Daniel Sparks dirige une équipe qui tente de découvrir les changements chimiques qui empêchent d'abaisser le taux de cholestérol et d'atténuer les problèmes cardiaques.

At McMaster University, Larry Chambers and his team are working on developing services to help seniors with dementia and their caregivers.



À l'Université McMaster, Larry Chambers et son équipe travaillent à concevoir des services pour aider à la fois les personnes âgées atteintes de démence évolutive et leurs soignants.

At the University of Manitoba, William Orr and his team are designing drug therapies that will help the liver destroy cancer cells instead of nurturing them.

À l'Université du Manitoba, William Orr et son équipe sont à mettre au point des médicaments pour permettre au foie d'éliminer les cellules cancéreuses au lieu d'en favoriser le développement.

Edward Tredget and his research team at the University of Alberta are developing treatments for the mechanism that creates the painful and disfiguring scarring associated with serious burns.

L'équipe de chercheurs d'Edward Tredget, à l'Université de l'Alberta, travaille à mettre au point des médicaments visant à contrer le mécanisme qui crée les cicatrices douloureuses et défigurantes associées aux brûlures graves.

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PSYCHOSOCIAL AND BEHAVIOURAL STUDIES RELATED TO HEALTH RESEARCH
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At the University of Saskatchewan, Suzanne Laferté is investigating colon cancer cells. Her research team hopes to target the cells for therapies which prevent them from spreading the cancer.

À l'Université de la Saskatchewan, Suzanne Laferté fait actuellement des recherches sur les cellules cancéreuses du colon. Son équipe de chercheurs souhaite cibler les cellules à traiter pour enrayer la propagation du cancer.

At the University of British Columbia, researcher Janice Eng is determining what aspects of balance and gait problems experienced by patients with Parkinson's disease would be helped by surgery.

La chercheuse Janice Eng, de l'Université de la Colombie-Britannique, travaille à déterminer les problèmes d'équilibre et de démarche, dont souffrent les personnes atteintes de la maladie de Parkinson, qui pourraient être contrés par une chirurgie.

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Ibrahim Yousef, Ph.D. . . . . Montréal

Paul Hoffman of Dalhousie University is looking for ways of protecting transplant patients and others with weak immune systems from the bacteria which causes Legionnaire's disease.

Paul Hoffman, de l'Université Dalhousie, cherche des moyens de protéger les greffés et autres patients, dont le système immunitaire est affaibli, de la bactérie qui provoque la maladie des légionnaires.

Kevin Keough of Memorial University is trying to identify the cause of diseases resulting from dysfunctions in the pulmonary surfactant, a watery film that protects the inside of the lungs.

Kevin Keough de l'Université Memorial essaie d'identifier la cause des maladies provoquées par le mauvais fonctionnement du surfactant pulmonaire, cette pellicule aqueuse qui protège l'intérieur des poumons.

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